The Bulletins are published weekly throughout the school year (thirty issues) to aid teachers and students in keeping abreast of geography behind current news events.

GEOGRAPHIC SCHOOL BULLETINS

of
The National Geographic Society
WASHINGTON 6, D. C.

The National Geographic Society is a non-profit educational and scientific Society established for the increase of geographic knowledge and its popular diffusion.

VOLUME XXX February 25, 1952 NUMBER 20

1. Asia Holds More Than Half of Earth's People
2. Latin American States Join in Marine Venture
3. Manners and Customs Change Slowly in Yemen
4. Tree-Ring Calendars Give Early Man's History
5. New Portugal Bridge Leads to Vacation Land

(SEE BULLETIN NO. 1) RANDOLPH A. CHRISTIE

THE RECLINING BUDDHA OF PEGU, BURMA: ASIA'S 137 MILLION BUDDHISTS REVERE SUCH IMAGES

Bulletin No. 1, February 25, 1952

Asia Holds More Than Half of Earth's People

ASIA, scene of some of the world's knottiest current problems, far outranks other continents in size and population. It contains one fourth of earth's land and more than half of its people.

Most of Asia's people are poor. Many millions live close to the thin frontier of starvation, battling famines and soil-eroding floods. Yet the continent is rich beyond measure in tapped and untapped resources.

World's High and Low Points

In Asia man probably took his first halting steps in agriculture and animal husbandry, worked out his first problems in irrigation. Asia gave the world practically all its fruits and vegetables, its flowers and domesticated animals. From its sands archeologists have dug the remains of the earliest-known cities.

Asia reaches lower (at the Red Sea) and extends higher than any continent. East and west from its high point—Mt. Everest—sweeps a continent-wide festoon of mountains, tied in the middle by the "Pamir Knot" at the very "roof of the world." Passes across this towering wall lie between 15,000 and 16,000 feet in altitude—higher than the highest peak in the United States.

One of the highest spots on earth on which human beings live all year round is the village of Gartok in Tibet, at more than 14,500 feet. Verkhoyansk, Siberia, is the coldest place in the world; its thermometer drops lower than 90 degrees below zero in winter. Singapore, "City of the Lion," at Malaya's jungle tip, meanwhile swelters in equatorial heat.

Across southeast Asia, monsoons sweep in from tropic seas, unloading their rain on lush jungle coasts and soggy paddy fields, gullied hills and silt-laden rivers. From Korea to the teeming "subcontinent" of India, people depend on rice, and rice depends on rain.

Densest Population Along Rivers

Roaming the parched plateaus of the southwest, domain of sultans and sand, other peoples tend their herds and grow dates along oasis-dotted wadis. Oil wells, lonely pipelines, and sun-baked refineries give an incongruous touch in the countries of the Middle East.

In the river-fed lowland valleys of Asia live the densest human concentrations on earth. Rolling east to the Pacific are the Hwang (Yellow), Yangtze, and Mekong. Through the Himalayas and into the great valleys of India and Pakistan go the sacred rivers, Brahmaputra, Ganges, and Indus. To the Persian Gulf flow the Tigris (illustration, next page) and Euphrates, draining the land where Western history had its dawn. Russia's vast Asiatic segment, thinly settled by comparison, is split by the Ob, Yenisei, and Lena flowing to the Arctic Ocean.

Asia discovered Europe long before Europe discovered Asia. Trade routes linked East and West many centuries before Marco Polo set out

ENTERED AS SECOND CLASS MATTER APRIL 27, 1943, POST OFFICE, WASHINGTON, D. C., UNDER ACT OF MARCH 3, 1879.
COPYRIGHT, 1952, BY THE NATIONAL GEOGRAPHIC SOCIETY. INTERNATIONAL COPYRIGHT SECURED. ALL RIGHTS RESERVED.
SUBSCRIPTION FORTY CENTS FOR THIRTY WEEKLY ISSUES DURING THE SCHOOL YEAR. IN CANADA, SIXTY CENTS.

UMI

AMOS BURG

A CARAVAN OF TRUCKS AWAITS ITS TURN TO TAKE TO THE ONE-WAY STRETCH OF MOUNTAIN ROAD BETWEEN BOGOTÁ, COLOMBIA'S CAPITAL, AND VILLAVICENCIO

Beyond the farthest tin roof, the narrow road curves round the mountain. From the mass of tropical vegetation (left) long, fringed banana leaves rattle in the breeze. Colombia's varied altitudes give its cities widely different temperatures. Bogotá, less than five degrees north of the Equator, enjoys a temperate climate because of its 8,660-foot elevation. Villavicencio, on the *llanos*—vast plains which sweep eastward from the Andes toward Brazil and Venezuela—is definitely tropical.

Latin American States Join in Marine Venture

A NEW chapter in the history of international cooperation has been written by Colombia, Ecuador, and Venezuela. These three South American republics have united in the successful operation of one of the world's newest merchant fleets, the *Flota Mercante Grancolombiana.*

Ownership of Flota Mercante Grancolombiana is jointly held by the three nations. The line operates in the Caribbean Sea, and among its home nations, North America, and Europe.

Four Additional Ships Building in Canada

Officials of the company recently announced their plan to spend $30,000,000 in the next five years for construction of 13 cargo-passenger vessels. This will bring the number of ships owned by the company to 30.

Grancolombiana now operates 13 of its own vessels. It has four under construction in Canadian shipyards in addition to the 13 which are part of the new building program. The company also charters more than a score of additional ships.

The company was formed by the three South American nations in 1946 to provide adequate shipping service under its own flag to compete with foreign-owned lines touching the ports of the three republics. Actual operation began in 1947 with four ships.

Colombia, Ecuador, and Venezuela have not always been so unified, although for a time after the wars which freed them from Spain they formed one political unit, Gran Colombia, or Greater Colombia.

Simon Bolívar, the South American liberator, set up Gran Colombia after winning a series of hard-fought battles that freed the northern part of South America from Spanish rule early in the 19th century.

Bolívar served at various times as president of the Republic of Gran Colombia, but lived to see the nation torn by internal strife.

At the time of Bolívar's death in December, 1830, Gran Colombia had ceased to exist as an integral unit. Venezuela had broken away from the union the previous April. Now known as the United States of Venezuela (Estados Unidos de Venezuela), the country has an area of 352,143 square miles, and nearly 4,000,000 people.

Ecuador's Wealth in Forest Products

In August of 1830 delegates from Quito, which had been a Spanish presidency, met and voted to become an independent nation. Calling itself the Republic of Ecuador (República del Ecuador), the nation of 276,000 square miles now has a population of 3,200,000. Its forests produced the greater part of the world's balsa wood. Cocoa is its chief agricultural product. Rice and coffee are important exports. During World War II, in cooperation with United States experts, Ecuador intensified its cinchona industry (illustration, next page) in order to replace the quinine lost to the Allies through Japan's occupation of Java.

The United States of Colombia (República de Colombia) (illustration, inside cover) has existed under that name since 1863. It has an area of about 400,000 square miles, and a population of more than 11,000,000 people.

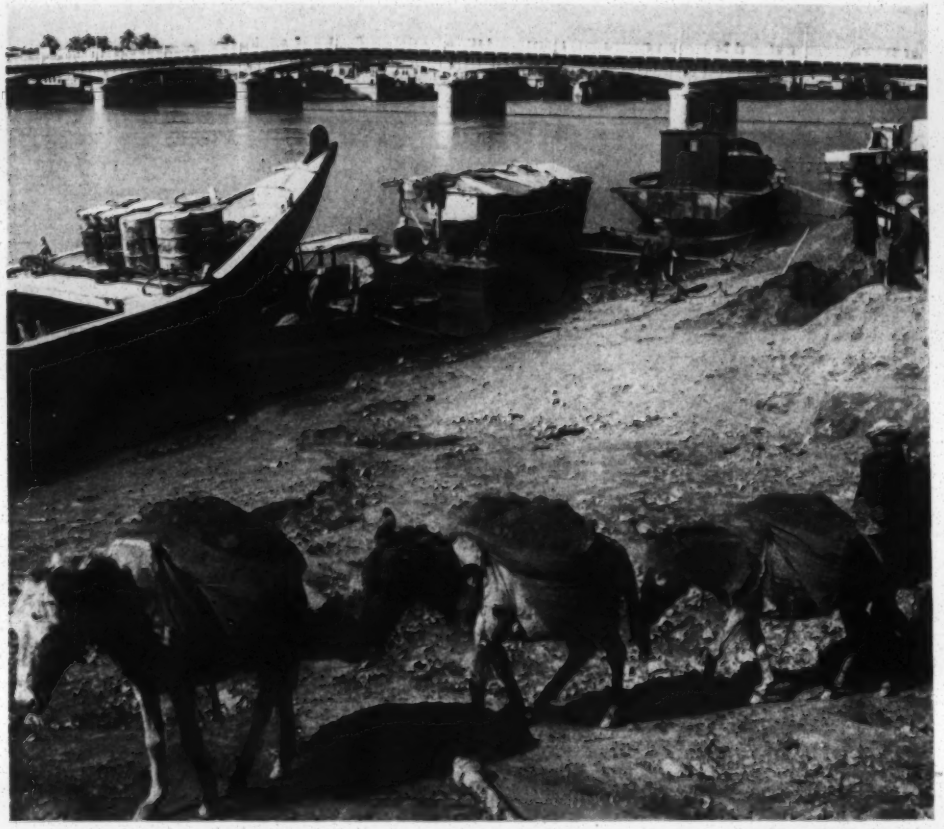
for Cathay, or Columbus sailed west with a letter for the Grand Khan. Today Malayan rubber, Asiatic silk, Indian lac, Bengal jute, Singapore tin, Iranian oil, and Indochina's rice contribute to world trade.

High civilizations were known in Asia while Paris was still a cluster of mud huts. All the great religions developed in Asia (illustration, cover). Dynasties rose and fell, disappearing into forgotten ruins. Tides of conquest flowed back and forth. Conquering the Persian Empire, Alexander the Great marched to the Indus. Islam rose in mighty power, spreading west across Africa, knocking on the gates of Europe. Genghis Khan's "Golden Horde" rolled from the Sea of Okhotsk to the Danube.

World War II introduced Asia to millions of Americans. United States troops in Korea again fight on Asian soil.

NOTE: All the countries of Asia may be located on the National Geographic Society's map of Asia and Adjacent Areas. Write the Society's headquarters for a price list of maps.

For further information, refer to the *Cumulative Index to the National Geographic Magazine*, in your library, for articles on the various countries of Asia listed at the end of the heading "Asia." *(Back issues of the Magazine may be obtained from the Society's headquarters at 60¢ a copy, 1946 to date; $1.00, 1930-1945; and $2.00, 1912-1929. Earlier issues, when available, at varied prices.)*



MAYNARD OWEN WILLIAMS

BENEATH A MODERN BRIDGE AT BAGHDAD, DONKEY AND ARAB CONTINUE AGE-OLD TASKS

Bulletin No. 3, February 25, 1952

Manners and Customs Change Slowly in Yemen

"DON'T point your feet!"

Many an American mother has warned her children that it is impolite to point a finger, but in Yemen, Red Sea kingdom of His Majesty Imam Ahmad bin Yahya Hamid al-din, it is considered particularly rude to point the feet at anyone while sitting on carpeted, cushioned floors. And in Yemen, people do sit on the floor, Eastern style, not in chairs, and they fold their legs, tailor fashion.

In the little country at the southwestern corner of the Arabian peninsula, which the Romans called Arabia Felix—"Happy Arabia"—hand-clapping is another Western custom which is also taboo.

Fortresses Date from Middle Ages

Yemen, with an area of about 75,000 square miles, is a little smaller than Nebraska. In spite of its Arabian location, Yemen is not a nation of roving nomads and occasional oases.

With a population of approximately 5,000,000 people, it is a land of crowded cities where massive buildings of stone and sun-dried brick stand within protecting walls; of fertile valleys watered by bubbling springs and sparkling streams; of dusty deserts and rugged mountains on whose precipitous sides frown fortresses built in the Middle Ages. The curving domes and slender minarets of mosques gleam white above the walls of its cities and against the green slopes of its inland mountains.

In Yemen the people called "Bedouins" are not the wandering nomads so often associated with the term. They are farmers who raise grain, grapes, apricots, citrus fruits, walnuts, and vegetables on their highland acres. They look with suspicion upon their rare visitors because of a superstitious belief that the coming of strangers brings drought.

Dagger Completes Men's Costume

The Yemeni, especially the city dwellers, have another strong conviction. They firmly believe that they invented the skyscraper. The many-storied buildings of San'a, capital of the country, Ta'izz, and other cities of the highlands where stone is available, back up this architectural claim.

Considered part of the costume of every well-dressed man and boy in Yemen is the sharp curved dagger, fashioned of native steel. This weapon is thrust under a wide belt ornamented with gold or silver. Round their heads the Yemeni wrap turbans, both plain and decorated with embroidery. Flowing robes are the style in the cooler mountain districts, but in Hodeida and other steaming ports on the Red Sea, the men go about wearing a garment like a short skirt wrapped around them.

Sheltered women of wealthy families are not often seen in public, and are veiled when they do leave their homes. For comfort and convenience, working women—farmers' wives and those of poor city families —dispense with the stifling mask.

Yemen is a country where the camel (illustration, next page) is of prime importance in the transportation system. The long-faced, swaying

UMI

Colombia is second only to Brazil in coffee production. Fertile soil and varied climate make possible a wide range of fruit and vegetables. Colombia is rich in minerals and produces enormous quantities of oil—34,000,000 barrels in 1950.

Since the breakup of Gran Colombia, various moves have been made to form close liaison between the three countries. In the summer of 1948, a Gran Colombian economic conference was held in Quito, Ecuador, to plan cultural and economic cooperation among the three republics.

Flota Mercante Colombiana, which antedates the Quito conference, remains an outstanding example of cooperation between Latin-American nations in a commercial undertaking.

NOTE: Colombia, Ecuador, and Venezuela may be located on the Society's map of South America.

For further information, see "Search for the Scarlet Ibis in Venezuela," in the *National Geographic Magazine* for May, 1950; "El Sangay, Fire-Breathing Giant of the Andes," January, 1950; "Sea Fever," February, 1949; "Keeping House for a Biologist in Colombia," August, 1948; "Cruising Colombia's 'Ol' Man River'," May, 1947; "Quinine Hunters in Ecuador," March, 1946; and "From Sea to Clouds in Ecuador," December, 1941.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, January 28, 1952, "Orinoco Cuts Path to Venezuela's Iron"; "Maracaibo Gave Venezuela Name and Fortune," February 19, 1951; and "Ecuador —Storehouse of Strategic Materials," January 8, 1951.

COORDINATOR OF INTER-AMERICAN AFFAIRS

AT BANOS, ECUADOR, WORKERS SORT AND BAG SUN-DRIED CINCHONA, SOURCE OF QUININE

Bulletin No. 4, February 25, 1952

Tree-Ring Calendars Give Early Man's History

FIFTY years ago a young astronomer drove a wagon down a pine-forested mountain side in northern Arizona.

He was thinking idly of sunspots, those remarkable blotches on the blinding face of the sun which come and go in a definite rhythm of years. Then he began noticing the aged trees around him and the changes in the forest as he progressed downward toward the desert floor.

Records Nearly 2,000 Years of History

If climate could so affect growth, and if sunspots affected climate, as some scientists were saying, should not a history of sunspots be written in the slow year-by-year growth of trees?

Such was the idea that has given science a calendar record of weather and human life in the southwestern United States reaching back nearly 2,000 years.

The astronomer's name was Andrew E. Douglass. Today, at 84, he is still on the job. His life work over the past half-century has been tree rings.

From a code language that nature writes in wood, he has read many secrets, among them the dates of North American Indian civilizations existing long before Columbus was born.

Trees grow by adding a new layer of wood each year just beneath their bark. In climates where winter halts this process for part of the year, the bands or rings are separate and distinct, an exact record of the age of each tree.

Climate varies the width of these rings, particularly in regions where rainfall or temperature are a crucial factor in plant growth. Professor Douglass found such ring patterns could be matched in trees growing over wide areas.

New Mexico Pueblo Occupied Before Norman Conquest

By "crossdating" trees, tracing their rings back through overlapping lives of generations of trees, he gradually constructed a chronology of hundreds of years.

Beyond the utmost reach of living trees, Professor Douglass found that beams from ancient ruins and buried logs could be used to carry the story back many more centuries.

In the 1920's, the National Geographic Society sponsored a series of expeditions in the Southwest, searching for clues to the history of pre-Columbian Indians in the ruins of such settlements as Pueblo Bonito in Chaco Canyon, New Mexico.

In 1929, Pueblo Bonito was dated exactly by the tree-ring studies of Professor Douglass—its earliest timber was cut in 919 A.D.; it had reached its golden age in 1067, one year after the Norman invasion of England, and was still occupied in 1127.

More than 40 other Indian ruins were fitted into the chronology, world archeology's most precise calendar of pre-history. Today, in the

UMI

creature is the cheapest and the most usual vehicle for carrying goods to market and between the inland towns and ports on the Red Sea.

As Yemen is separated from Africa only by the narrow Red Sea, most of the vegetation and animal life of the country are like those of the "Dark Continent." Gazelles, leopards, goats, and monkeys live in the hills. A most unusual resident is the hyrax, a tailless animal resembling a large rabbit. Its thick fur is often used for rugs.

Only in recent years has Yemen taken to modern Western ways. Electricity has been introduced in the three principal cities—San'a, Ta'izz, and Hodeida. A few motor vehicles compete with the camels. Health conditions have been surveyed, and improvements are being planned to port facilities, highways, and agricultural methods.

But 20th-century Yemen, land of the Queen of Sheba (Saba), is still amazingly "different"—a country where noon comes at six o'clock—six hours after sunrise; where thieves are tied to posts and their loot in turn tied to them; where high-grade Mocha coffee is grown; and where hot and cold running water comes from roof tanks laboriously filled by chanting porters carrying four-gallon tins from near-by cisterns and springs.

From Aden, port capital of Britain's Aden Protectorate which rims Yemen on the south, are shipped hides, grain, and the world-famed coffee of the Near East kingdom.

NOTE: Yemen is shown on the Society's map of Asia and Adjacent Areas.

See also, "Yemen Opens the Door to Progress," in the *National Geographic Magazine*, February, 1952; and "Yemen—Southern Arabia's Mountain Wonderland," November, 1947; and, in the GEOGRAPHIC SCHOOL BULLETINS, November 28, 1949, "World Gets Peek Past Yemen Mystery Curtain."

RICHARD H. SANGER

A CAMEL, TYPICAL ARAB CARRIER, SAUNTERS ALONG A HODEIDA STREET ON ITS WATER ROUTE

Yemen's chief Red Sea port, sizzling in the sun, is dependent on the most casual of water systems. A boy, equipped with gasoline tin, rickety two-wheeled cart, and camel, sells it from door to door.

New Portugal Bridge Leads to Vacation Land

PORTUGAL'S completion of one of the longest bridges in Europe opens an easy automobile route to the republic's southernmost and perhaps least-traveled province—the Algarve.

The new bridge crosses the Tagus (Tejo) River near Lisbon (Lisboa), capital of Portugal, to the southbound highway into what may prove one of Europe's most popular vacation lands. The Algarve is a region of unspoiled beaches over which Atlantic waves roll from west and south.

Arabs Left Their Mark on Algarve

Portugal has long been a popular resort region with British and continental visitors. However, most of them have gone no farther than Lisbon and the near-by resorts—Estoril, Cascais, and Sintra. Few have crossed the Tagus into the southern provinces—Alentijo and Algarve.

Portugal's point nearest to Africa, the Algarve, is much more like that southern continent than like Europe. Its architecture, its handicrafts, its customs, even its name—from the Arabic *El Gharb* (Kingdom of the West)—show the influence of the Moors who invaded the region in the eighth century.

Towns along the south coast—Lagos, Portimao, Faro, Olhao, Tavira—with their flattopped, tile-roofed houses, whitewashed and gleaming in the dazzling sun, are much more like the towns of neighboring Africa than like those of Europe.

Algarve is only about 125 miles south of Lisbon, but the disadvantage of having to cross the Tagus by ferry or over upstream bridges has tended to discourage travel to the south.

University at Coimbra 600 Years Old

Europe's westernmost country, Portugal forms the continent's southwestern corner. The Atlantic Ocean bounds it on the west and south. On the east and north, Spain is its neighbor. The eastern boundary runs about 100 miles inland through rugged mountains.

Northward from Lisbon, along the well-marked tourist trails, is the town of Coimbra, on the Mondego. On the heights above the river stands the 600-year-old university—Paços das Escolas—most famous of the country's three. Those in Lisbon and Pôrto (Oporto) have existed only since 1911.

Still farther north, on the Douro River, stands Pôrto, noted for its wine. Terraced vineyards rising from the river produce the grapes which are trampled into wine by the villagers, often to the strains of gay music.

Fish vie with wine as important exports. Fishing villages dot the coast from Vila Real de Santo António at the Spanish border west and north to Viana do Castelo. Hauled up on the beaches at Nazaré, Furadouro, and other villages one sees boats with high crescent prows like those of the Phoenicians who sailed westward from Tyre and Sidon centuries before the birth of Christ. Plaids woven and worn by the fisherfolk of Nazaré challenge in brightness the gaudiest tartans of the Scots. Windmills wave angular arms in the sea breeze (illustration, next page).

UMI

University of Arizona's Laboratory of Tree-Ring Research, a tree calendar written by desert conifers goes back to the year 11 A.D. Another has been traced in the giant sequoias of California to earlier than 1,000 B.C.

DR. E. F. CARPENTER

From the Four Corners country of the Southwest, from northern Alaska, from England, the Scandinavian countries, and from other parts of Europe, tree-ring sequences studied by Professor Douglass and his associates have shown rhythms or cycles of growth which correspond closely with the 11-year sunspot cycle.

Sunspots Puzzle Scientists

Sunspots have long been linked with the great magnetic storms which sweep the earth, interrupting radio communication and garbling telephone and telegraph transmission. They may be related, in some way to the eerie aurora polaris—flickering light in the night skies over far-northern and southern latitudes.

Scientists do not yet know the cause of sunspots, and are not sure of their effect on the earth's weather and long-term climate. But the history of climate found in tree-rings has given searchers an important tool to help unlock these mysteries of the sun and the earth.

NOTE: Regions where tree-ring research has revealed centuries of history may be located on the Society's map of the Southwestern United States.

For additional information, see "California's Coastal Redwood Realm," in the *National Geographic Magazine* for February, 1939; and "The Secret of the Southwest Solved by Talkative Tree Rings," December, 1929 (out of print; refer to your library).

TREE RINGS TELL THEIR TALE

This cross section of a Douglas fir cut in 1260 reveals 187 years of life for the tree and a chapter in the prehistoric existence of the Indians who lived in the region of the southwest which is now the State of Arizona.

The country has an area of approximately 35,000 square miles, including the Azores. Although these islands lie about 1,000 miles west, in the Atlantic, they are an integral part of the republic and send representatives to the national assembly in Lisbon.

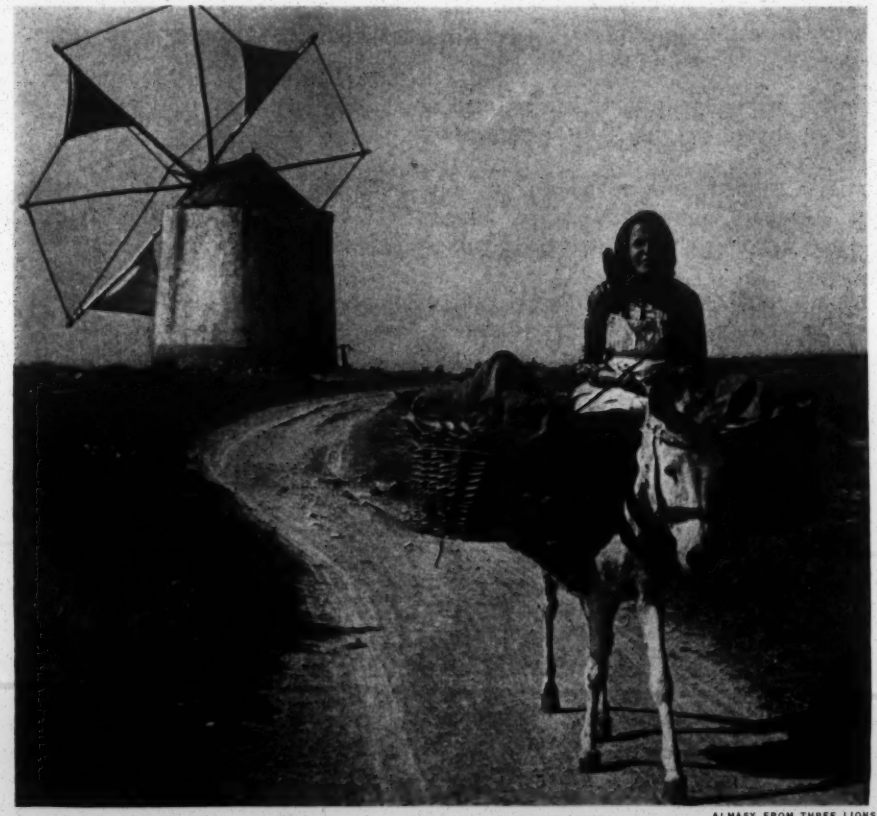
Portugal's population is nearly 8,500,000. In addition, a considerable colonial empire stretches from the Cape Verde Islands, some 350 miles west of Dakar, French West Africa, to Macau, half a world away, near Hong Kong.

From Portugal came such famous navigators and explorers as Ferdinand Magellan, one of whose ships was first to circle the globe; Bartolomeu Diaz, who discovered the Cape of Good Hope; Vasco da Gama, who first sailed the sea route to India; and Pedro Alvares Cabral, who, in attempting to follow da Gama's lead, went in the wrong direction and, in 1500, landed in Brazil and claimed it for Portugal.

NOTE: Portugal is shown on the Society's map of Western Europe.

For further information, see "Portugal Is Different," in the *National Geographic Magazine* for November, 1948; "Castles and Progress in Portugal," February, 1938; and "An Altitudinal Journey Through Portugal," November, 1927.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, March 28, 1949, "Drought Dries Crops, Cuts Power in Portugal."



ALMASY FROM THREE LIONS

DONKEY TRANSPORT AND A WINDMILL'S SPIDERY ARMS ARE RELICS OF PORTUGAL'S EARLY DAYS